

REMARKS

Claims 1-16 are pending in this application. By this Amendment, claim 1 is amended to specify that the fibrils are substantially free of stems, as supported by the original specification at, for example, paragraph [0004] of the substitute specification. Claim 4 is amended to recite that the fibrils are derived directly from the dope and are not derived from pulp, as supported by the original specification at, for example, paragraphs [0004] and [0026] of the substitute specification. No new matter is added by this Amendment.

The courtesies extended to Applicant's representative by Examiner Gray at the interview held December 30, 2008, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

Claims 1-16 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,442,003 (Takahashi). This rejection is respectfully traversed.

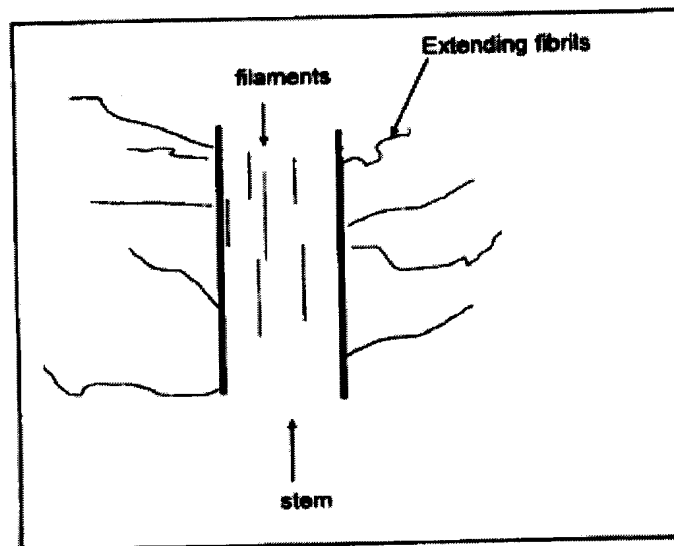
Claim 1 is directed to aramid fibrils having in the wet phase a Canadian Standard Freeness (CSF) value less than 300 ml and, after drying, a specific surface area (SSA) less than $7 \text{ m}^2/\text{g}$ and a weight weighted length for particles having a length $> 250 \text{ } \mu\text{m}$ ($\text{WL}_{0.25}$) less than 1.2 mm, wherein the fibrils are substantially free of fiber stems. Claim 4 recites a method of preparing the fibrils of claim 1, in which the fibrils are derived directly from a dope and not through the use of pulp. The Office Action alleges that Takahashi discloses aramid fibrils produced by a method the same as recited in claim 4, and thus allegedly produces fibrils inherently having the properties recited in claim 1. Applicants respectfully disagree.

Takahashi does not describe a method of preparing fibrils as recited in claim 4, and in fact does not describe fibrils at all. Accordingly, Takahashi does not describe aramid fibrils

having the properties recited in claim 1, including fibrils having a specific surface area (SSA) less than $7 \text{ m}^2/\text{g}$.

As summarized in the Abstract of Takahashi, Takahashi describes a para-aramid pulp obtained from a para-aramid fiber that is spun from a particular para-aramid dope. A para-aramid pulp obtained from a para-aramid fiber as described in Takahashi does not produce the aramid fibrils as recited in claim 1.

Pulp and fibrils are completely different materials. Takahashi describes a conventional pulp material in which a para-aramid such as PPTA has been spun to a continuous fiber, and the fiber is then cut into small pieces such as 6 mm in length and then fibrillated to pulp. See Examples 34 and 35 of Takahashi. This conventional pulp material contains a stem with fibril-like materials extending out of the stem. This conventional pulp material is described in paragraphs [0003] to [0004] of the present specification, and is further illustrated in the figure below.



The stem of this pulp is comprised of a build-up of filaments that are positioned lengthwise. Due to the refining treatment, the outer filaments become loose and extend from the stem as fibril-like materials. However, these fibril-like materials remain attached to the stem. The

process for obtaining this material is known as fibrillating and the material obtained is called pulp.

Present claim 1, however, is directed to aramid fibrils. As explained in paragraph [0004] of the specification, the term "fibrils" in the present application refers to the polymeric material being in fully or essentially fully fibril form and not containing substantial amounts of fiber-like, or stem, material. Amended claim 1 specifically recites that the fibrils are substantially free of stems. The recited fibrils are free fibrils. Such fibrils cannot be obtained from fiber, even using extreme long extensive refining processes, as the fibrils remain attached to a stem material. The aramid fibrils of claim 1 are thus structurally different from the fibrillated pulp material described in Takahashi. As recited in claim 4, the fibrils of claim 1 are not obtained by refining fiber as in Takahashi, but are prepared by a direct spin process without first making a fiber (pulp).

Because the fibrils of claim 1 are structurally different from the fibrillated pulp of Takahashi, the properties are also different. For example, the specific surface area (SSA) of fibrils is much lower than the SSA of ordinary pulp which contains stems. Conventional pulp has a large surface area of at least $8 \text{ m}^2/\text{g}$ as explained in paragraph [0003] of the present specification. The reason for the lower SSA with fibrils is that the wet fibrils as directly obtained are extremely fibrillated, i.e., in comparison with common pulp, all filaments have become fibrils (which is impossible if one starts with fiber). This extreme fibrillation results in extreme low Canadian Standard Freeness (CSF) values. When the wet fibrils are dried, they shrink enormously, for example much more than when stems are present. This shrinkage leads to the very low SSA values. The combination of low CSF values and low SSA values is unique and unobtainable with common pulp as described in Takahashi, where low CSF values correspond to high SSA values.

For the foregoing reasons, Takahashi does not describe, and would not have rendered obvious, the aramid fibrils of claim 1 or the process of making such fibrils in claim 4.

Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-16 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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